FACT SHEET FOR NPDES PERMIT NO. WA0038687

LARCH CORRECTIONS CENTER WASTEWATER TREATMENT FACILITY

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INTRODUCTION

The Federal Clean Water Act (FCWA, 1972, and later modifications, 1977, 1981, and 1987) established water quality goals for the navigable (surface) waters of the United States. One of the mechanisms for achieving the goals of the Clean Water Act is the National Pollutant Discharge Elimination System of permits (NPDES), which is administered by the Environmental Protection Agency (EPA). The EPA has delegated responsibility to administer the NPDES permit program to the state of Washington on the basis of Chapter 90.48 Revised Code of Washington (RCW) which defines the Department of Ecology's (Department) authority and obligations in administering the wastewater discharge permit program.

The regulations adopted by the State include procedures for issuing permits [Chapter 173-220 Washington Administrative Code (WAC)], technical criteria for discharges from municipal wastewater treatment facilities (Chapter 173-221 WAC) and water quality criteria for surface and ground waters (Chapters 173-201A and 200 WAC). These regulations require that a permit be issued before discharge of wastewater to waters of the state is allowed. The regulations also establish the basis for effluent limitations and other requirements which are to be included in the permit.

This permit is issued according to protocols that apply screening criteria to assess key environmental protection parameters. It is designed to apply to selected minor dischargers that, based on the available information, the Department believes have proved to pose a relatively low environmental impact potential to its receiving water environment. The permit contains the technology-based effluent limitations as given in the Code of Federal Regulations (CFR) 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). A preliminary assessment of the discharge's potential for exceedance of the water quality standards for chlorine and ammonia has been made. Where there is a lack of adequate data indicating the discharger's potential for exceedance of the water quality criteria, this permit does not include water quality-based numeric effluent limitations. Based on the Department's preliminary evaluation, the permit may include monitoring requirements and/or specified measures to control discharges of these toxic pollutants.

One of the requirements (WAC 173-220-060) for issuing a permit under the NPDES permit program is the preparation of a draft permit and an accompanying fact sheet. Public notice of the availability of the draft permit is required at least thirty days before the permit is issued (WAC 173-220-050). The fact sheet and draft permit are available for review (see Appendix A--Public Involvement of the fact sheet for more detail on the Public Notice procedures).

This fact sheet has been reviewed by the Permittee and errors in fact have been corrected. After the public comment period has closed, the Department will summarize the substantive comments and the response to each comment. The summary and response to comments (Appendix C) will become part of the file on the permit and parties submitting comments will receive a copy of the Department's response. The fact sheet will not be revised. Changes to the permit will be addressed in Appendix C--Response to Comments.

GENERAL INFORMATION	
Applicant:	Department of Corrections
Facility Name and Address:	Larch Corrections Center 15314 Dole Valley Road
Type of Treatment:	Extended air activated sludge
Discharge Location:	Cedar Creek, a tributary to the East Fork Lewis River Latitude: 45° 43' 35" N Longitude: 122° 20' 31" W
Water Body ID Number:	WA-27-2045

BACKGROUND INFORMATION

DESCRIPTION OF THE FACILITY

1. Treatment Processes: Liquid stream: influent manhole, mechanical screen, aeration basin, secondary clarifier, sand filter, ultraviolet disinfection, reaeration, cooling tower, end-of-pipe discharge to creek. Solids stream: waste activated sludge discharge to existing lagoon, supernatant return to the headworks.
2. Treatment Plant Classification: Classification this plant is II.
3. Industrial Users: There are no industrial contributors to the applicant's sewer collection system.

Description of the Receiving Water

The facility discharges to Cedar Creek which is designated as a Class AA receiving water in the vicinity of the outfall. Characteristic uses include the following:

Water supply (domestic, industrial, agricultural); stock watering; fish migration; fish rearing, spawning and harvesting; wildlife habitat; primary contact recreation; sport fishing; boating and aesthetic enjoyment; commerce and navigation.

Water quality of this class shall markedly and uniformly exceed the requirements for all or substantially all uses.

DISCHARGE OUTFALL AND DILUTION

Secondary treated, filtered and disinfected effluent is discharged from the facility via a 12 inch corrugated metal pipe into Cedar Creek.

A preliminary estimate of the acute dilution factor was made for this discharge based on the allowable percent flow of the receiving water using the following formula:

acute dilution factor = (Qeffluent + 2.5% Qstream)/(Qeffluent)

where, Qeffluent = effluent flow during critical condition is the maximum daily flow of 0.108 cfs; and, Qstream = receiving water flow, 1.0 cfs

Based on this preliminary estimate, the acute dilution factor is:

Acute DFmax = {0.108 cfs + (0.025 x 1.0 cfs)}/0.108 cfs = 1.2 : 1

At critical condition the stream width is approximately seven feet wide. Using the RIVPLUM 3 spreadsheet it is predicted that the maximum daily flow will be completely mixed with the stream within 30 feet of the discharge point.

The chronic mixing zone is limited to one quarter (25 percent) of the stream flow. Using this fact, the chronic mixing zone is:

Chronic DFmax = {0.108 cfs + (0.25 x 1.0 cfs)}/0.108 cfs = 3.3 : 1

GROUND WATER QUALITY LIMITATIONS

The Department has promulgated Ground Water Quality Standards (Chapter 173-200 WAC) to protect uses of groundwater. Permits issued by the Department shall be conditioned in such a manner so as not to allow violations of those standards (WAC 173-200-100).

The facility stores excess biosolids in the lagoon adjacent to the treatment facility. The biosolids are settled and digested with the supernate and rainfall being pumped back to the headworks. The lagoon, built in 1973, was constructed with a bentonite liner. There are no demonstrated water quality problems associated with the use of the lagoon, nor are any anticipated. Therefore, no limitations are required based on potential effects to ground water.

PERMIT STATUS

The previous permit for this facility was issued on May 12, 1976. The previous permit placed effluent limitations on 5-day Biochemical Oxygen Demand (BOD5), Total Suspended Solids (TSS), pH, and Fecal Coliform bacteria.

An application for permit renewal was submitted to the Department on October 1, 1996, and accepted by the Department on February 10, 1997, (not PNOA).

COMPARISON OF EFFLUENT LIMITS WITH THE EXISTING PERMIT ISSUED MAY 12, 1976

Parameter	**Existing Permit Limits**		**Proposed Permit Limits**	
	Monthly Average	Weekly Average	Monthly Average	Weekly Average
	Technology Based Limits			
Flow	0.03 MGD		Flow is a design criteria not an effluent limit in this permit	
BOD	30 mg/L 85 % removal 7.5 lb/day	45 mg/L 11.3 lb/day	15 mg/L 85 % removal 9 lb/day	23 mg/L 14 lb/day
TSS	75 mg/L 18.7 lb/day	113 mg/L 28.1 lb/day	23 mg/L 85 % removal 14 lb/day	35 mg/L 21 lb/day
Fecal Coliform	200/100 mL	400/100 mL	50/100 mL (monthly geometric mean)	100/100 mL
pH	6 to 9 standard units		6.5 to 8.5 standard units	
	Water Quality Based Limits			

	Daily Maximum	Final	
		Monthly Average	Daily Maximum
Ammonia	None	1.0 mg/l	1.5 mg/l
Chlorine	None	N/A	
Dissolved Oxygen	None	9.0 mg/l from April 1 through October 31	
Temperature	None	Operate Effluent Cooling Tower from April 1, through October 31	

WASTEWATER CHARACTERIZATION

The concentration of pollutants in the discharge was reported in the NPDES application and in discharge monitoring reports. The effluent is characterized as follows:

Table 1: Wastewater Characterization (October 1997 – August 1998)

Parameter	**annual average**	**lowest monthly average**	**highest monthly average**
Flow (MGD)	.0213	.0185	.0265
BOD_5 (mg/L)	4.4	2.1	9.1
TSS (mg/L)	6.8	2.1	13.3
Fecal Coliform (colonies per 100 mL)	2.1	0	10.2
Ammonia Nitrogen (mg of N/L)	0.3	.05	1.18
Temperature, summer (degree Fahrenheit)	57	51	58
Temperature, winter (degree Fahrenheit)	56.8	53	63
Dissolved Oxygen	10.6	9.12	11.7
pH range		low pH = 6.2	high pH = 10

PROPOSED PERMIT LIMITATIONS AND CONDITIONS

Federal and state regulations require that effluent limitations set forth in a NPDES permit must be either technology or water quality-based. Technology-based limitations for municipal discharges are set by regulation (40 CFR 133, and Chapters 173-220 and 173-221 WAC). Water quality-based limitations are based upon compliance with the Surface Water Quality Standards (Chapter 173-201A WAC), Ground Water Standards (Chapter 173-200 WAC) or Sediment Quality Standards (Chapter 173-204 WAC). The most stringent of these types of limits must be chosen for each of the parameters of concern. Each of these types of limits is described in more detail below.

DESIGN CRITERIA

In accordance with WAC 173-220-130(1)(a), effluent limitations shall not be less stringent than those based upon the design criteria for the facility, which are contained in approved engineering plans, reports, or approved revisions. Also, in accordance with WAC 173-220-150 (1)(g), flows or waste loadings shall not exceed approved design criteria.

The design criteria for this treatment facility are taken from the state of Washington Department of Corrections, Larch Corrections Center, Wastewater Treatment Facility Engineering Report, January 1996, prepared by Gray & Osborne, Inc. and are as follows:

Table 2: Design Standards for Larch Correction Center WWTP.

Parameter	Design Quantity
Max month flow (MGD)	.072
Annual Average daily flow (MGD)	.048
Max daily flow (MGD)	.144
Peak hourly flow (MGD)	.24
BOD influent loading (lb./day)	220
TSS influent loading (lb./day)	180
Design population equivalent (# of inmates)	400

SUMMARY OF COMPLIANCE WITH THE PREVIOUS PERMIT

The facility received its last inspection on August 8, 1997.

During the history of the previous permit with the new plant, the Permittee has remained in compliance, based on Discharge Monitoring Reports (DMRs) submitted to the Department and inspections conducted by the Department.

TECHNOLOGY-BASED EFFLUENT LIMITATIONS

Municipal wastewater treatment plants are a category of discharger for which technology-based effluent limits have been promulgated by federal and state regulations. These effluent limitations are given in the 40 CFR Part 133 (federal) and in Chapter 173-221 WAC (state). These regulations are performance standards that constitute all known available and reasonable methods of prevention, control, and treatment for municipal wastewater.

SURFACE WATER QUALITY-BASED EFFLUENT LIMITATIONS

In order to protect existing water quality and preserve the designated beneficial uses of Washington's surface waters, WAC 173-201A-060 states that waste discharge permits shall be conditioned such that the discharge will meet established Surface Water Quality Standards. The Washington State Surface Water Quality Standards (Chapter 173-201A WAC) is a state regulation designed to protect the beneficial uses of the surface waters of the state.

Based on the limited assimilative capacity of the ambient environment (small stream), monthly average effluent limits of 15 mg/l for BOD_5 and 23 mg/l for Total Suspended Solids were determined to be necessary to preserve water quality.

The discharge is believed to have an adverse environmental impact potential and therefore, the permit contains more stringent effluent limits and receiving water data gathering and monitoring requirements. An evaluation of the discharge's potential for exceedance of the water quality standards for ammonia was done. Based on this evaluation, described in the following section, and plant performance, the discharger does not have a reasonable potential for exceedance of the water quality standards if the proposed limits

are met. Since the acute dilution factor is low and the receiving water is a small Class AA stream, a monthly average limit of 1.0 mg/l, and a daily maximum of 1.5 mg/l for ammonia were established. These values are based on a reasonable potential dilution analysis contained in the Larch Corrections Center Facility Engineering Report dated January 1996.

A procedural practice was established for minimizing the impact of inadequate dissolved oxygen levels in the final treatment plant effluent during the low flow, higher temperature time of the year. This practice is intended to ensure that the effluent temperature improves creek conditions during all times when the creek is impaired for this parameter. Dissolved oxygen is given a limit of 9.0 mg/l to also be protective of the creek water quality. The 40-acre parcel that the Larch Correction Facility is sited on is owned by the Department of Natural Resources (DNR). DNR originally established the site as a work camp. Part of the original DNR complex included a fire pond that was built in-line with Cedar Creek back in the 1950's. The pond is still in use as a water source fighting fires in the region.

The pond adds heat to the creek through absorption of solar radiation and air temperature exchange with the surface of the pond. The Creek water temperature due to the pond reaches 70 degrees Fahrenheit in the hottest part of the summer.

Dissolved oxygen levels in the receiving water can be influenced by temperature as well as nutrient loadings. This problem is most acute during the summer critical flow period. To mitigate a low Creek dissolved oxygen level during the summer months, the plant was equipped with a reaeration manhole designed to add dissolved oxygen to the effluent. This permit will require that the Correction facility staff operate the reaeration facility when they also operate their heat exchanger from April 1 through October 31. Cedar Creek is impaired for temperature and dissolved oxygen violations of Class AA water quality standards probably due to the fire pond influence. Before the new treatment plant was constructed complete with effluent cooling tower and reaeration manhole, the old lagoon effluent contributed to the Creek's high temperature and low dissolved oxygen problem. With the new cooling tower and reaeration manhole, the new treatment plant doesn't raise the temperature or lower the dissolved oxygen of Cedar Creek.

If the fire pond was taken out of the Creek some time in the future, there is a potential that the treatment plant effluent could cause a water quality violation of temperature and dissolved oxygen. The cooler ambient temperature and higher dissolved oxygen of the rejuvenated creek might be unduly influenced by the plant effluent even with the cooling tower and reaeration manhole on line. The Larch Correction Facility may have to consider other discharge options in the future such as seasonal reuse.

CONSIDERATION OF SURFACE WATER QUALITY-BASED CRITERIA

Critical Conditions

Determination of the reasonable potential for exceedance of the surface water standards quality standards are made for the waterbody's critical condition, which represents the receiving water and waste discharge condition with the highest potential for adverse impact on the aquatic biota, human health, and existing or characteristic water body uses.

Mixing Zones

The Water Quality Standards allow the Department to authorize mixing zones around a point of discharge in establishing surface water quality-based effluent limits. Both "acute" and "chronic" mixing zones may

be authorized for pollutants that can have a toxic effect on the aquatic environment near the point of discharge. The concentration of pollutants at the boundary of these mixing zones may not exceed the numerical criteria for that type of zone. Mixing zones can only be authorized for discharges that are receiving all known, available, and reasonable methods of prevention and control (AKART) and in accordance with other mixing zone requirements of WAC 173-201A-100. The Permittee has met this criteria.

Preliminary Dilution Factor Estimation

When pollutant concentrations in the proposed discharge exceed water quality criteria with technology-based controls which the Department has determined to be AKART, mixing zones may be authorized in accordance with Chapter 173-201A WAC. These mixing zones may use up to 25 percent of the critical low flow for chronic standards and up to 2.5 percent for acute standards.

Mathematical models and/or dye studies may be used to determine the dilution factors of effluent to receiving water that occur within the allowable mixing zones at the critical condition. The dilution factors determined will then be compared with those based on the allowable river flow percents (WAC 173-201) and the lower number used.

The RIVPLUM5 model was used to determine the dilution factors at the boundaries of the allowable mixing zone. RIVPLUM5 is a two dimensional model based on the assumption that the discharge is a single point source and is completely and rapidly mixed vertically in the receiving river. Using the RIVPLUM5, the Department simulated a number of discharge scenarios. The predicted acute dilution factors were compared with those calculated based on the 2.5 percent stream flow. The RIVPLUM5 predicted higher dilution factor in most simulated instances where the stream depth is greater than two feet. Therefore the use of 2.5 percent of the flow is appropriate and is the maximum allowed by 173-201A-100(8)(A)(ii).

However, although the estimation of the dilution factor based on the 2.5 percent of the stream flow may not always yield the lowest value, this permit is issued to selected minor municipalities where the potential for adverse environmental impacts is believed to be low. Where adequate data is lacking for determination of the dilution factors, the permit may use a preliminary estimate of the dilution factor based on the allowable percent flow of the receiving water.

Nitrification is expected to occur in the biological systems as part of their normal operation, especially in the warmer seasons. Nitrification causes the effluent ammonia concentration to decrease which will correspondingly reduce the potential for exceedance of the ammonia criteria in the receiving water. The Permittee may monitor the concentrations of nitrite and nitrate in the effluent to verify and measure the extent of the ammonia nitrification in the Permittee's facility.

The permit requires weekly ammonia monitoring in the plant effluent during the critical period as reasonably possible to verify that ammonia is removed. The POTW operator should implement necessary actions to maintain optimum plant nitrification during the critical period. The Department may require additional monitoring of the effluent and the receiving water if it determines that a reasonable potential for exceedance of ammonia criteria exists.

MONITORING AND REPORTING

Effluent monitoring, recording, and reporting are required (WAC 173-220-210 and 40 CFR 122.41) to verify that the treatment process is functioning correctly and the effluent limitations are being achieved.

The monitoring and testing schedule is detailed in the proposed permit under Condition S.2. Specified monitoring frequencies take into account the quantity and variability of discharge, the treatment method, past compliance, significance of pollutants, and cost of monitoring. The required monitoring frequency is consistent with agency guidance given in the current version of the Department Permit Writer's Manual.

The Department may require additional monitoring to refine estimates of the reasonable potential for exceedance of the ammonia criteria. The parameters to be monitored may include the ammonia concentration in the effluent, and the receiving water ammonia concentration, pH, and temperature.

OTHER PERMIT CONDITIONS

PREVENTION OF FACILITY OVERLOADING

Overloading of the treatment plant is a violation of the terms and conditions of the permit. To prevent this from occurring, RCW 90.48.110 and WAC 173-220-150 require the Permittee to take the actions detailed in proposed permit requirement S.4. to plan expansions or modifications before existing capacity is reached and to report and correct conditions that could result in new or increased discharges of pollutants. Condition S.4. restricts the amount of flow.

OPERATION AND MAINTENANCE (O&M)

The proposed permit contains condition S.5. as authorized under RCW 90.48.110, WAC 173-220-150, Chapter 173-230 WAC, and WAC 173-240-080. It is included to ensure proper operation and regular maintenance of equipment, and to ensure that adequate safeguards are taken so that constructed facilities are used to their optimum potential in terms of pollutant capture and treatment.

RESIDUAL SOLIDS HANDLING

To prevent water quality problems, the Permittee is required in permit condition S6. to store and handle all residual solids (grit, screenings, scum, sludge, and other solid waste) in accordance with the requirements of RCW 90.48.080 and state Water Quality Standards.

The final use and disposal of sewage sludge from this facility is regulated by U.S. EPA under 40 CFR 503. The disposal of other solid waste is regulated by the jurisdictional health department.

OUTFALL EVALUATION

Proposed permit condition S.8. requires the Permittee to conduct an outfall inspection and submit a report detailing the findings of that inspection. The purpose of the inspection is to determine the condition of the discharge pipe and diffusers.

GENERAL CONDITIONS

General Conditions are based directly on state and federal law and regulations and have been standardized for all individual NPDES permits issued by the Department.

PERMIT ISSUANCE PROCEDURES

PERMIT MODIFICATIONS

The Department may modify this permit to impose numerical limitations, if necessary to meet Water Quality Standards, Sediment Quality Standards, or Ground Water Standards, based on new information obtained from sources such as inspections, effluent monitoring, outfall studies, and effluent mixing studies.

The Department may also modify this permit as a result of new or amended state or federal regulations.

RECOMMENDATION FOR PERMIT ISSUANCE

This proposed permit meets all statutory requirements for authorizing a wastewater discharge, including those limitations and conditions believed necessary to protect human health, aquatic life, and the beneficial uses of waters of the state of Washington. The Department proposes that this permit be issued for five years.

REVIEW BY THE PERMITTEE

A proposed permit was reviewed by the Permittee for verification of facts. Only factual items were corrected in the draft permit and fact sheet.

APPENDICES

APPENDIX A--PUBLIC INVOLVEMENT INFORMATION

The Department has tentatively determined to reissue a permit to the applicant listed on page one of this fact sheet. The permit contains conditions and effluent limitations which are described in the rest of this fact sheet.

Public notice of application was published to inform the public that an application had been submitted and to invite comment on the reissuance of this permit.

The Department will publish a Public Notice of Draft (PNOD) to inform the public that a draft permit and fact sheet are available for review. Interested persons are invited to submit written comments regarding the draft permit. The draft permit, fact sheet, and related documents are available for inspection and copying between the hours of 8:00 a.m. and 5:00 p.m. weekdays, by appointment, at the regional office listed below. Written comments should be mailed to:

Water Quality Permit Coordinator
Department of Ecology
Southwest Regional Office
P.O. Box 47775
Olympia, WA 98504-7775

Any interested party may comment on the draft permit or request a public hearing on this draft permit within the thirty (30) day comment period to the address above. The request for a hearing shall indicate the interest of the party and the reasons why the hearing is warranted. The Department will hold a hearing if it determines there is a significant public interest in the draft permit (WAC 173-220-090). Public notice regarding any hearing will be circulated at least thirty (30) days in advance of the hearing. People expressing an interest in this permit will be mailed an individual notice of hearing (WAC 173-220-100).

The Department will consider all comments received within thirty (30) days from the date of public notice of draft indicated above, in formulating a final determination to issue, revise, or deny the permit. The Department's response to all significant comments is available upon request and will be mailed directly to people expressing an interest in this permit.

Further information may be obtained from the Department by telephone, (360) 407-6279, or by writing to the address listed above.

APPENDIX B--GLOSSARY

Acute Toxicity--The lethal effect of a compound on an organism that occurs in a short period of time, usually 48 to 96 hours.

Ambient Water Quality--The existing environmental condition of the water in a receiving water body.

Ammonia--Ammonia is produced by the breakdown of nitrogenous materials in wastewater. Ammonia is toxic to aquatic organisms, exerts an oxygen demand, and contributes to eutrophication. It also increases the amount of chlorine needed to disinfect wastewater.

Average Monthly Discharge Limitation--The average of the measured values obtained over a calendar month's time.

Average Weekly Discharge Limitation -- The highest allowable average of daily discharges over a calendar week, calculated as the sum of all daily discharges measured during a calendar week divided by the number of daily discharges measured during that week. The daily discharge is calculated as the average measurement of the pollutant over the day.

Best Management Practices (BMPs)--Schedules of activities, prohibitions of practices, maintenance procedures, and other physical, structural and/or managerial practices to prevent or reduce the pollution of waters of the State. BMPs include treatment systems, operating procedures, and practices to control: plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. BMPs may be further categorized as operational, source control, erosion and sediment control, and treatment BMPs.

BOD_5--Determining the Biochemical Oxygen Demand of an effluent is an indirect way of measuring the quantity of organic material present in an effluent that is utilized by bacteria. The BOD_5 is used in modeling to measure the reduction of dissolved oxygen in a receiving water after effluent is discharged. Stress caused by reduced dissolved oxygen levels makes organisms less competitive and less able to sustain their species in the aquatic environment. Although BOD is not a specific compound, it is defined as a conventional pollutant under the federal Clean Water Act.

Bypass--The intentional diversion of waste streams from any portion of a treatment facility.

Chlorine--Chlorine is used to disinfect wastewaters of pathogens harmful to human health. It is also extremely toxic to aquatic life.

Chronic Toxicity--The effect of a compound on an organism over a relatively long time, often 1/10 of an organism's lifespan or more. Chronic toxicity can measure survival, reproduction or growth rates, or other parameters to measure the toxic effects of a compound or combination of compounds.

Class 1 Inspection--A walk-through inspection of a facility that includes a visual inspection and some examination of facility records. It may also include a review of the facility's record of environmental compliance.

Class 2 Inspection--A walk-through inspection of a facility that includes the elements of a Class 1 Inspection plus sampling and testing of wastewaters. It may also include a review of the facility's record of environmental compliance.

Clean Water Act (CWA)--The Federal Water Pollution Control Act enacted by Public Law 92-500, as amended by Public Laws 95-217, 95-576, 96-483, 97-117; USC 1251 et seq.

Combined Sewer Overflow (CSO)--The event during which excess combined sewage flow caused by inflow is discharged from a combined sewer, rather than conveyed to the sewage treatment plant because either the capacity of the treatment plant or the combined sewer is exceeded.

Composite Sample--A mixture of grab samples collected at the same sampling point at different times, formed either by continuous sampling or by mixing discrete samples. May be "time-composite"(collected at constant time intervals) or "flow-proportional" (collected either as a constant sample volume at time intervals proportional to stream flow, or collected by increasing the volume of each aliquot as the flow increased while maintaining a constant time interval between the aliquots.

Construction Activity--Clearing, grading, excavation and any other activity which disturbs the surface of the land. Such activities may include road building, construction of residential houses, office buildings, or industrial buildings, and demolition activity.

Critical Condition--The time during which the combination of receiving water and waste discharge conditions have the highest potential for causing toxicity in the receiving water environment. This situation usually occurs when the flow within a water body is low, thus, its ability to dilute effluent is reduced.

Daily Maximum Discharge Limitation--The greatest allowable value for any calendar day.

Dilution Factor--A measure of the amount of mixing of effluent and receiving water that occurs at the boundary of the mixing zone. Expressed as the inverse of the effluent fraction.

Engineering Report--A document which thoroughly examines the engineering and administrative aspects of a particular domestic or industrial wastewater facility. The report shall contain the appropriate information required in WAC 173-240-060 or 173-240-130.

Fecal Coliform Bacteria--Fecal coliform bacteria are used as indicators of pathogenic bacteria in the effluent that are harmful to humans. Pathogenic bacteria in wastewater discharges are controlled by disinfecting the wastewater. The presence of high numbers of fecal coliform bacteria in a water body can indicate the recent release of untreated wastewater and/or the presence of animal feces.

Grab Sample--A single sample or measurement taken at a specific time or over as short period of time as is feasible.

Industrial Wastewater--Water or liquid-carried waste from industrial or commercial processes, as distinct from domestic wastewater. These wastes may result from any process or activity of industry, manufacture, trade or business, from the development of any natural resource, or from animal operations such as feed lots, poultry houses, or dairies. The term includes contaminated storm water and, also, leachate from solid waste facilities.

Infiltration and Inflow (I/I)--"Infiltration" means the addition of ground water into a sewer through joints, the sewer pipe material, cracks, and other defects. "Inflow" means the addition of rainfall-caused surface water drainage from roof drains, yard drains, basement drains, street catch basins, etc., into a sewer.

Mixing Zone--An area that surrounds an effluent discharge within which water quality criteria may be exceeded. The area of the authorized mixing zone is specified in a facility's permit and follows procedures outlined in state regulations (Chapter 173-201A WAC).

National Pollutant Discharge Elimination System (NPDES)--The NPDES (Section 402 of the Clean Water Act) is the Federal wastewater permitting system for discharges to navigable waters of the United States. Many states, including the State of Washington, have been delegated the authority to issue these permits. NPDES permits issued by Washington State permit writers are joint NPDES/State permits issued under both State and Federal laws.

pH--The pH of a liquid measures its acidity or alkalinity. A pH of 7 is defined as neutral, and large variations above or below this value are considered harmful to most aquatic life.

Potential Significant Industrial User--A potential significant industrial user is defined as an Industrial User which does not meet the criteria for a Significant Industrial User, but which discharges wastewater meeting one or more of the following criteria:

a. Exceeds 0.5 percent of treatment plant design capacity criteria and discharges <25,000 gallons per day or;

b. Is a member of a group of similar industrial users which, taken together, have the potential to cause pass through or interference at the POTW (e.g. facilities which develop photographic film or paper, and car washes).

The Department may determine that a discharger initially classified as a potential significant industrial user should be managed as a significant industrial user.

Significant Industrial User (SIU)--

1) All industrial users subject to Categorical Pretreatment Standards under 40 CFR 403.6 and 40 CFR Chapter I, Subchapter N and;

2) Any other industrial user that: discharges an average of 25,000 gallons per day or more of process wastewater to the POTW (excluding sanitary, noncontact cooling, and boiler blow-down wastewater); contributes a process wastestream that makes up 5 percent or more of the average dry weather hydraulic or organic capacity of the POTW treatment plant; or is designated as such by the Control Authority* on the basis that the industrial user has a reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement [in accordance with 40 CFR 403.8(f)(6)].

Upon finding that the industrial user meeting the criteria in paragraph two, above, has no reasonable potential for adversely affecting the POTW's operation or for violating any pretreatment standard or requirement, the Control Authority* may at any time, on its own initiative or in response to a petition received from an industrial user or POTW, and in accordance with 40 CFR 403.8(f)(6), determine that such industrial user is not a significant industrial user.

*The term "Control Authority" refers to the Washington State Department of Ecology in the case of non-delegated POTWs or to the POTW in the case of delegated POTWs. **State Waters**--Lakes, rivers, ponds, streams, inland waters, underground waters, salt waters, and all other surface waters and watercourses within the jurisdiction of the state of Washington.

Stormwater--That portion of precipitation that does not naturally percolate into the ground or evaporate, but flows via overland flow, interflow, pipes, and other features of a storm water drainage system into a defined surface water body, or a constructed infiltration facility.

Technology-based Effluent Limit--A permit limit that is based on the ability of a treatment method to reduce the pollutant.

Total Suspended Solids (TSS)--Total suspended solids is the particulate material in an effluent. Large quantities of TSS discharged to a receiving water may result in solids accumulation. Apart from any toxic effects attributable to substances leached out by water, suspended solids may kill fish, shellfish, and other aquatic organisms by causing abrasive injuries and by clogging the gills and respiratory passages of various aquatic fauna. Indirectly, suspended solids can screen out light and can promote and maintain the development of noxious conditions through oxygen depletion.

Upset--An exceptional incident in which there is unintentional and temporary noncompliance with technology-based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, lack of preventative maintenance, or careless or improper operation.

Water Quality-based Effluent Limit--A limit on the concentration of an effluent parameter that is intended to prevent the concentration of that parameter from exceeding its water quality criterion after it is discharged into a receiving water.

APPENDIX C--RESPONSE TO COMMENTS

1. Comment:

Page 5, S1. EFFLUENT LIMITATIONS, A. Effluent Limitations
The first sentence in footnote "b" should be corrected to delete "and Total Suspended Solids" since the TSS limit in this sentence is not consistent with the table. The limit for effluent TSS is correctly addressed in the second sentence of this footnote.

Response:

Concur. The correction will be made to S1. Effluent Limitations.

2. Comment:

Page 5, S1. EFFLUENT LIMITATIONS, A. Effluent Limitations
A minimum dissolved oxygen concentration of 9.0 mg/L is indicated without seasonal restrictions, whereas the table on page 4 in the Fact Sheet states that this limit applies only during the period from April 1 through October 31. This inconsistency needs to be resolved.

Response:

Concur. The table under S1. titled Effluent Limitations will be corrected. The dissolved oxygen limit will only apply from April 1 through October 31.

3. Comment:

Page 6, S2. TESTING SCHEDULE
The requirement for continuous measurement of effluent flow should be changed to continuous measurement of influent flow. The plant is only equipped with an influent flow meter (Parshall flume).

Response:

Concur. If all decant/overflow from the sludge storage lagoon is routed to flow through the headworks flow meter at all times. The testing schedule S2. in the permit and the plant design criteria in S4. will be revised to reflect the use of an influent flow meter as the plant flow to include sludge lagoon overflow/decant as well as Larch Correction Center flow.

4. Comment:

Page 6, S2. TESTING SCHEDULE
The testing schedule should also include effluent monitoring requirements for ammonia and dissolved oxygen.

Response:

Concur. Ammonia and Dissolved Oxygen will be added to the Testing Schedule S2.